The Indian Journal for Research in Law and Management

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Editor-in-Chief – Dr. Muktai Deb Chavan; Publisher – Alden Vas; ISSN: 2583-9896

AI ASSISTED ANTI – DUMPING INVESTIGATIONS: DATA GOVERNANCE AND ALGORITHMIC ACCOUNTABILITY IN THE INDIAN LEGAL FRAMEWORK

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Abstract

The accelerating integration of Artificial Intelligence (AI) into trade remedy investigations is changing how national authorities collect, process, and evaluate trade data. In India, AI-assisted tools promise to improve efficiency, accuracy, and speed in anti-dumping investigations. This strengthens protection for domestic industries against unfair trade practices. However, this technological advancement brings complex legal and policy challenges at the intersection of trade law, cyber law, and AI governance. This paper examines the Indian legal regime on anti–dumping under the Customs Tariff Act, 1975, and the Anti-Dumping Rules, 1995. Furthermore, the paper examines how AI-assisted investigations align with the obligations set by the WTO Anti-Dumping Agreement with emphasis placed on questions of transparency, procedural fairness, and evidentiary reliability, which lie at the core of trade remedies. Simultaneously, the paper discusses emerging concerns in cyber law, such as data privacy, cybersecurity, and the protection of confidential business information, as vast and sensitive trade data are subject to algorithmic analysis. The research identifies regulatory and jurisprudential gaps in both Indian law and WTO frameworks regarding secure, accountable, and bias-free AI deployment in trade remedies. The paper presents AI not merely as a tool for efficiency but as a transformative element that challenges the strength of current legal frameworks. As technological advancement and use of AI grow, the paper advances regulatory suggestions that seek to balance the adoption of technology with the imperatives of data protection, and compliance with international standards, thus contributing to the broader discourse on the future of AI in global trade governance.

Research Methodology: This research adopts a doctrinal approach to explore how artificial intelligence could be integrated into anti-dumping investigations and its viability under the

current legal framework. It also delves into the overlapping domains of trade law and cyber law to uncover potential compliance hurdles and gaps in governance. The research aims to develop a balanced framework that promotes transparency, accountability, and upholds due process in AI-assisted anti-dumping investigations.

CHAPTER I

Introduction

Anti-dumping measures are central instruments of Trade remedy law. These regulations, established under World Trade Organization agreements, function as non- tariff barriers designed to protect domestic industries against the dumping of goods by foreign corporations at unfairly low prices that may cause significant harm to local markets in the host nation.[1] Thus, dumping in its broadest sense, refers to the international price discrimination, occurring when an exporter sells goods in a foreign market at a price lower than that charged for similar goods in its domestic market.[2] Article VI of the General Agreement on Tariffs and Trade (GATT) 1994 prohibits such practices when they result in injury to the domestic industries of the importing country. The agreement sets out mandatory procedures and substantive rules for conducting anti-dumping investigations and national anti-dumping laws must align with the agreement and the investigative practices must strictly adhere to its provisions.[3]

India has emerged as an assertive user of trade remedy instruments, with the Directorate General of Trade Remedies (DGTR) serving as the principal authority overseeing investigations related to anti-dumping, safeguard, and countervailing duties. In a recent policy shift, the Indian Government announced the digitalisation of trade remedy proceedings with a view to offer enhanced transparency, efficiency and ease of access for all stakeholders.[4] This initiative marks a significant step toward modernizing quasi-judicial workflows, potentially enabling the integration of AI-assisted tools in data analysis, pattern detection, document processing and risk profiling.

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[1] World Trade Organization, *Anti-Dumping*, WTO | Understanding the WTO - Anti-dumping, subsidies, safeguards: contingencies, etc (last visited Oct. 22, 2025).

[2] Raj Bhala, *International Trade Law* 601 (Charlottesville: Michie Law Publishers, 1996). https://archive.org/details/internationaltra0000bhal_g9t8

[3] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 201 https://www.wto.org/english/docs_e/legal_e/adp_e.htm

[4] Govt to Launch Digital Platform for Trade Remedy Document Submissions, *Bus. Standard* (May 17, 2025), https://www.business-standard.com/india-news/govt-to-launch-digital-platform-for-trade-remedy-document-submissions-125051700702_1.html.

Artificial Intelligence technologies are increasingly deployed in regulatory and enforcement settings, including customs risk assessment and cargo inspection. In response to the growing influence of AI in public governance, external bodies like Organisation for Economic Co-operation and Development (OECD) have issued frameworks emphasizing principles of trustworthy AI including transparency, accountability and human oversights.[5]

However, the deployment of AI in anti-dumping investigations does raise acute legal questions. On one hand, AI promotes transparency, expeditious case handling, reduces human error, and robust evidence sifting. On the other hand, as the investigation process engage large volumes of confidential data, there are data protection concerns involved. Additionally, bias, data driven discrimination, and confidentiality concerns may undermine the procedural safeguards in the Anti-Dumping Agreement. Regulatory initiatives like the European Union's Artificial Intelligence Act have begun to delineate and restrict high-risk applications of AI, particularly those affecting fundamental rights, sensitive commercial data, or administrative decisions subject to legal challenge.[6] Thus, within a trade remedy investigation, questions around secure data storage, cross border flows, audit trails of AI systems bring cyber governance into force, thereby signalling a need for a coherent regulatory framework to prevent straying of AI assisted anti-dumping investigations from WTO procedural compliance and the domestic legal standards.

CHAPTER II

Anti-Dumping Framework

In the international arena, WTO provides a structured framework enabling member countries to take measures against dumping. The framework governing the same is WTO Agreement on Anti- Dumping, formally referred as "Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994." The agreement establishes the following principles: the purposes of anti-dumping duties, circumstances justifying the imposition, the investigation process, determination of injury to the domestic industry. These provisions are designed to guide authorities responsible for initiating, evaluating, and enforcing anti-dumping

[5] OECD, *AI in Regulatory Design and Delivery: Governing with Artificial Intelligence* (2024), https://www.oecd.org/en/publications/governing-with-artificial-intelligence_795de142-en/full-report/ai-in-regulatory-design-and-delivery_128691e6.html.

[6] European Commission, *Trustworthy AI*, AI Watch, https://ai-watch.ec.europa.eu/topics/trustworthy-ai_en (last visited Oct. 22, 2025).

measures, ensuring that their actions align with the WTO's standards. [7] The agreement mandates that before initiating investigation, the following conditions have to be fulfilled; the conditions of dumping, material injury or threat of injury to the domestic industry, and the link between the injury and the dumping. The agreement further prescribes the procedure for investigation.

Indian scenario

A product is said to have been dumped if it is introduced into the commerce of another country at less than the normal value of the product and it causes/threatens material injury to an established industry of the country. Article VI of the GATT stipulates that 'in order to offset or prevent dumping a contracting party may levy on any dumped product an antidumping duty not greater in amount than the margin of dumping in respect of such countries'.[8] Almost all WTO member countries have adopted/amended their antidumping legislation largely in accordance with the GATT provisions to deal with dumped imports. Some of the countries that are not members of WTO have also acquired their antidumping legislation. Almost 90% of total world imports are now entering countries in which antidumping laws are in place.[9]

India, being a member of WTO, has made its anti-dumping laws in compliance with the provisions of the WTO agreement on Anti – Dumping and is anchored in the Customs Tariff Act, 1975[10] and the Customs Tariff (Identification, Assessment, and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995.[11] Investigations into dumping allegations are initiated by the Department of Trade Remedies and the Directorate General of Trade Remedies (DGTR) is responsible for conducting detailed inquiries and determination of injury, ensuring adherence to procedural fairness and transparency.

a) Customs Tariff Act, 1975

Definition of Dumping – Section 9A(1) of the Act states that where any article is exported from any country or territory to India at less than its normal value and such importation cause or

[7] Wolfgang Müller, Nicholas Khan & Tibor Scharf, *EC and WTO Anti-Dumping Law: A Handbook* (Oxford Univ. Press, 2008).
[8] General Agreement on Tariffs and Trade art. VI, Oct. 30, 1947, 61 Stat. A11, 55 U.N.T.S. 194 [hereinafter GATT 1947].
[9] WTO Secretariat, Anti-Dumping, Subsidies, Safeguards: Overview of WTO Rules on Trade Remedies (World Trade Org., 2022)
[10] Customs Tariff Act, No. 51 of 1975, § 9A, India Code (1975).
[11] Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995, Gazette of India, Extraordinary, Part II, sec. 3(i) (Jan. 1, 1995).

threatens material injury to domestic industry, or materially retards the establishment of any industry in India, then an anti-dumping duty can be imposed by the central government via notification, not exceeding the margin of dumping. [12] The explanation to the section defines the following terms

(a) Margin of Dumping: The difference between the export price and the normal value of the article.[13]

(b) Export Price: The price at which the article is exported from the exporting country or territory.[14]

(c) Normal Value: The comparable price, in the ordinary course of trade, for the like article when meant for consumption in the exporting country or territory.[15]

b)Customs Tariff (Identification, Assessment, and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995

The procedural framework governing anti-dumping proceedings in India is codified under the Customs Tariff (Identification, Assessment, and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995. These rules expand upon the principles laid out in WTO agreement on Anti-Dumping, offering detailed guidance on the conduct of investigations, the nature of evidence and the rights of the parties. Furthermore, they also state the conditions under which dumping is deemed to occur and the methodology for assessing normal value and export price, criteria for identifying injury to the domestic market etc. The investigating authorities are required to evaluate whether actual injury or threat thereof exists, based on factors such as volume of dumped imports, their pricing relative to domestic market levels and their impact on domestic producers in term of profitability, productivity, capacity utilization and employment. The rules further mandate that the findings of the investigation be disclosed to the concerned parties, thereby allowing them an opportunity of being heard. [16]

Functions of the Directorate General of Trade Remedies

The Directorate General of Trade Remedies (DGTR), earlier known as Directorate General of Anti-Dumping & Allied Duties, is a quasi-judicial body under the aegis of Ministry of

[12] Customs Tariff Act, No. 51 of 1975, § 9A(1), India Code (1975).
[13] *Id.* § 9A(1) expl. (a).
[14] *Id.* § 9A(1) expl. (b).
[15] Id. § 9A(1) expl. (c).
[16] Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995, Gazette of India, Extraordinary, Part II, Sec. 3(i) (Jan. 1, 1995).

Commerce & Industry. It is the single national authority for administering all trade remedial measures including anti-dumping and independently undertakes investigations before making its recommendations to the Central Government. Rule 3 of the Customs Tariff Rules designates the DGTR as the authority to conduct investigations[17]. The DGTR is responsible for initiating investigations, data collection and verification, determination of dumping and assessing injury.[18] Being a quasi-judicial authority, the decision of DGTR is subject to review and appeal by the Customs, Excise, and Service Tax Appellate Tribunal (CESTAT) and are bound to adhere the principles of natural justice in the course of investigations.[19]

Procedure of Anti-Dumping Investigations By The DGTR In India

The Customs Tariff Rules 1995, determine the structural rules governing anti-dumping proceedings. These rules elaborate on features derived from the WTO agreement.[20] The investigation process begins with initiation. A case is initiated based on a written request made by or on behalf of the domestic industry.[21] The application filed by the domestic industry must be robust and include complete evidence of dumping, injury and causal link between the dumped imports and the sustained injury. [22] The period of investigation varies from 6 months to 18 months and this period is informed to the public via notification in the official gazette.

The Four Pillars of Investigation

The whole investigation procedures rests upon extensive data analysis and technical processes demanding detailed and convincing evidences to justify the imposition of the anti-dumping duty.

1. *Dumping Margin:* This requires determining if the imported product is sold at a price below its normal value or cost of production in the exporting country. The DGTR

[17] Directorate General of Trade Remedies (DGTR), *About Us*, Ministry of Com. & Indus. (Gov't of India), https://www.dgtr.gov.in/about-us (last visited Nov. 2, 2025).
[18] ibid
[19] *Reliance Industries Ltd. v. Designated Authority*, 2006 (202) E.L.T. 23 (Del.) (recognizing DGTR's quasi-judicial character and requirement to provide fair hearing); *Jindal Poly Films Ltd. v. Designated Authority*, 2018 (360) E.L.T. 385 (Del.)
[20] Abhishek Karwasra & Rajiv Bhalla, An Appraisal of Anti-Dumping Laws in India, 5 Int'l J. Res. Pub. & Rev. 2246 (2024).
[21] Aradhna Aggarwal, *Anti-Dumping Law and Practice: An Indian Perspective*, Working Paper No. 85, Indian Council for Research on International Economic Relations (Apr. 2002).
[22] Aradhna Aggarwal, *Anti-Dumping Law and Practice: An Indian Perspective*, Working Paper No. 85, Indian Council for Research on International Economic Relations (Apr. 2002)

encounters several ambiguities when calculating the constructed normal value largely because of the exporter's non-cooperation in providing information.[23]

2. *Like Products:* The DGTR examines the physical characteristics and composition, end use and interchangeability, consumer perception, tariff classification, product processes and technical specifications.[24]
3. *Determination of Injury*: The DGTR determines whether dumping has caused or threatens to cause material injury to the domestic industry. The determination of injury is not presumed from dumping, but empirical and economic evidence has to be established like import volume effect, price effect, impact on domestic industry etc. [25]
4. *Causal Link:* A clear link must be established proving that dumping was the primary reason for the losses incurred by the domestic producers. The DGTR adopts the temporal correlation test to determine whether the surge in dumped imports coincides with the deterioration in the domestic industry's performance and the non-attribution test which examines the other possible causes like technological change, demand reduction to ensure that the injury is not wrongly attributed to dumping. [26]

Handling confidentiality and outcomes

Confidentiality is a key element of anti-dumping investigations under Article 6.5 of ADA[27] and Rule 7 of the Anti-Dumping Rules [28] recognizing the right of parties to claim confidentiality of information and the authorities must treat as confidential any information that is by its nature confidential. However, a non-confidential summary must be provided, allowing other parties to understand the substance of the confidential data without disclosing sensitive details as a procedural safeguard.[29]

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[23] F. No. 6/43/2019-DGTR (Final Findings) (showing normal value determined on basis of facts available, Rule 6(8)) ; Rule 6(8), Customs Tariff (Identification, Assessment & Collection of Anti-Dumping Duty) Rules, 1995 (India) (authorising facts-available / constructed value)

[24] *Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995*, r. 2(d) (India) ; *European Communities — Asbestos*, WT/DS135/AB/R, ¶ 92–100 (Appellate Body 2001).

[25] *Reliance Indus. Ltd. v. Designated Auth.*, (2006) 202 E.L.T. 23 (S.C.) (India).

[26] Ashwani Mahajan & Phool Chand & Harsha Vardhan Pasumarthi, 2021. "An Analysis of Impact of Anti-dumping Duties on India China Trade," South Asia Economic Journal, Institute of Policy Studies of Sri Lanka, vol. 22(2), pages 233-249, September.

[27] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 art. 6.5, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 201 [hereinafter *Anti-Dumping Agreement*];

[28] Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995, Gazette of India, Extraordinary, Part II, sec. 3(i), Rule 7 (Jan. 1, 1995).

[29] Birla Ericsson Opticals v. Designated Authority, CESTAT (Delhi), Apr. 22, 2004 (reported (2004) 167 E.L.T. 163 (Tri. – Del.))

Drawbacks of Conventional Anti-Dumping Investigations

The conventional anti-dumping investigations in India is characterized by its data intensive complexity and suffers several drawbacks due to several reasons;

1. Procedural Delays and Resource Constraints: A major difficulty is the existence of procedural delays and bureaucratic hurdles which can slow down investigations and decision making by the DGTR. This difficulty arises due to the following reasons

a. Prolonged Timelines: Although the Anti-Dumping Rules prescribe that investigation must be completed within one year, extendable by six months[30], in practice, investigations tend to take much longer, creating uncertainty for both domestic industries seeking relief and importers facing potential duties. [31]

b. Limited Capacity and lack of cooperation: The DGTR which handles numerous complex cases, is often constrained by limited capacity to carry out its work efficiently leading to backlogs and delays. [32] Delays are further compounded by difficulties in securing necessary information from the foreign exporters, thereby forcing the authorities to rely on best available information under Rule 6(8) of the 1995 Rules.[33]

c. High Costs: The investigation process involves multi-step data compiling, analysis and legal hearings.[34] The substantial legal costs associated with filing an anti-dumping case often mean that only dominant firms in concentrated markets such as the chemical and steel sectors in India, can afford to pursue such actions, potentially excluding smaller, affected producers. [35]

2. Methodological Ambiguities and Lack of Transparency: The methodologies used for calculating dumping and injury margins are often criticized for being susceptible to discretion and lacking transparency.

[30] Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995, Gazette of India, Extraordinary, Part II, sec. 3(i), Rule 17(1) (Jan. 1, 1995).
[31] Manvi Pant, *Jindal Stainless Says Government's Anti-Dumping Probe Delayed Amid U.S. Tariffs Uncertainty*, Reuters (Aug. 6, 2025) ; Directorate General of Trade Remedies, *Press Release: DGTR Initiatives and Timelines* (2019–2020).
[32] Lakshmikumaran & Sridharan, *Provisional Anti-Dumping Measures in India—An Overview* (2021).
[33] *Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995*, r. 6(8).
[34] Abhishek Karwasra & Dr. Rajiv Bhalla, *An Appraisal of Anti-Dumping Laws in India*, 5 Int'l J. Res. Pub. & Rev. 2246 (Nov. 2024), https://www.ijrpr.com/uploads/V5ISSUE11/IJRPR34920.pdf..
[35] Aradhna Aggarwal, *Anti-Dumping Law and Practice: An Indian Perspective*, Working Paper No. 85, Indian Council for Research on International Economic Relations (Apr. 2002).

a. *Arbitrary determinations* often arise as anti-dumping policies and practices are highly reliant on data, and ambiguities in the rules governing the calculation of dumping and injury margins facilitate affirmative dumping finding. [36]
b. *Reliance on Estimates:* When actual information is unavailable, authorities rely on the best available information or even list prices provided by petitioners. This leads to proceedings being deemed arbitrary and entirely at the discretion of the investigative authorities, increasing the risk of artificial dumping findings. [37]
c. *Causation Complexity*: Determining injury is complicated because there is no mathematical formula to severe the portion of injury specifically attributable to dumping from other economic factors and thus the decision is fundamentally an exercise of judgment.[38]
d. *Confidentiality Barrier*: In India, the calculation details are routinely treated as highly confidential and are not disclosed even to the parties concerned. [39]

3. Inefficiency: The DGTR's injury analysis heavily depends on data supplied by domestic producers, firms with outdated technology or inefficient production can use the system to secure protective duties rather than adjust their competitiveness.[40] Anti-dumping duties are frequently invoked as industrial policy tools rather than as instruments of fair trade, leading to rent-seeking and the entrenchment of inefficiency.[41]

Rise of AI In Global Trade Governance

The accelerating development and deployment of AI in trade governance is fundamentally transforming the international trade scenario, characterized by its transformative potential across the globe and the need for a coordinated international policy framework to manage its impact. [42]

[36] Panel Report, *United States—Anti-Dumping Measures on Certain Hot-Rolled Steel Products from Japan*, ¶¶ 7.55–7.61, WTO Doc. WT/DS184/R (Feb. 28, 2001), adopted as modified by the Appellate Body Report, WT/DS184/AB/R (July 24, 2001)
[37] *Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995*, r. 6(8).
[38] Bruce A. Blonigen & Thomas J. Prusa, *Antidumping*, in 2 *Handbook of Commercial Policy* 107–58 (Kyle Bagwell & Robert W. Staiger eds., Elsevier 2016)
[39] *Birla Ericsson Opticals Ltd. v. Designated Auth.*, 2004 (167) E.L.T. 163 (CESTAT-Del.).
[40] Aradhna Aggarwal, *Anti-Dumping Law and Practice: An Indian Perspective*, Working Paper No. 85, Indian Council for Research on International Economic Relations (Apr. 2002).
[41] Bruce A. Blonigen & Thomas J. Prusa, *Antidumping*, in 2 *Handbook of Commercial Policy* 107–58 (Kyle Bagwell & Robert W. Staiger eds., Elsevier 2016)
[42] World Trade Organization, *World Trade Report 2025: Making Trade and AI Work Together to the Benefit of All* (2025), https://www.wto.org.

1. *Economic Impact and Trade Growth:* AI possess vast potential to lower trade costs and boost productivity. WTO simulations suggest that use of AI could lead to significant increases in global trade and real income, whereby the global trade is projected to rise by 34 to 47% by 2040. Overall AI is expected to contribute approximately $19.9 trillion to the global economy by 2030. [43]
2. *Trade Facilitation and efficiency:* AI as a tool aids global commerce by streamlining processes, reducing costs and facilitating a more accessible trading system. AI tools are already enhancing trade efficiency by automating customs clearance, improving supply chain visibility, strengthening market intelligence and reducing language barriers. A joint survey conducted by the WTO and the International Chamber of Commerce (ICC) found that nearly 90 per cent of firms using AI reported tangible benefits in trade-related activities. [44]
3. *Governance in Customs and Compliance:* Traditional customs operations were struggling to keep up with the increasing trade volumes thereby highlighting the need for deployment of AI. AI is already transforming customs operation by enabling administrations to unlock the full value of their data and enhance decision making. [45] AI technologies support the classification of goods through the Harmonized System (HS), simplifying matters for users and providing greater compliance and certainty. AI can also analyze document mismatches to reduce manual verification of valuation. [46]

AI Assisted Anti-Dumping Investigations

AI can be leveraged to streamline and enhance various aspects of anti-dumping investigations, but its application must be carefully managed to ensure compliance with principles of fairness mandated by the WTO framework and the Indian legal regime. AI is particularly useful in managing and interpreting immense volumes of trade and financial data that form the basis of

[43] International Data Corporation (IDC). (2024). IDC: Artificial Intelligence Will Contribute $19.9 Trillion to the Global Economy through 2030 and Drive 3.5% of Global GDP in 2030. https://www.idc.com/getdoc.jsp?containerId=prUS52600524; Meltzer, J. P. (2018). The impact of artificial intelligence on international trade. Brookings https://www.brookings.edu/ articles/the-impact-of-artificial-intelligence-on-international-trade/

[44] World Economic Forum, *Artificial Intelligence for Efficiency, Sustainability and Inclusivity in TradeTech*, Insight Report (Jan. 2025), https://www.weforum.org/publications/artificial-intelligence-for-efficiency-sustainability-and-inclusivity-in-tradetech-2025/.

[45] World Customs Organization, *Public-Version Detailed Report on the Adoption of AI and ML in Customs* (2024), https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/activities-and-programmes/smart-customs/public-version_detailed-report-on-the-adoption-of-ai-and-ml-in-customs.pdf.

[46] Velichka Marinova, *Artificial Intelligence in Customs*, 13 Izv. J. Union Sci. – Varna Econ. Sci. Ser. 253 (Oct. 2024), https://www.researchgate.net/publication/39058493

an anti-dumping investigation, which relies on robust evidence to establish dumping, injury and a causal link.

A. Identification and Enforcement :

The most direct application of AI in trade remedies involves data analysis for identification and enforcement:

1. *Identifying Dumping cases and circumvention:* The National Association of Software and Services Companies (NASSCOM) specifically suggested that AI can be used to identify potential cases of dumping. This is achieved by analysing large volumes of import export data and systematically mapping it with origin and destination countries. This application is seen as leading to improved enforcement of trade remedies. [47]
2. *Detecting Anomalies*: AI can be used to analyse dumping and countervailing anomalous activities. This relates to broader use of AI in customs operations for predictive analytics and risk management which helps in identifying suspicious trade patterns.[48]
3. *Risk Management in Trade*: The increasing use of trade remedies is driving demand for AI enabled solutions that analyse trade related risks. AI models can analyse historical data to predict which shipments are most likely to be at risk optimising resource allocation.[49]

B. Data Processing and Calculation Support:

Anti-dumping investigations rely heavily on accurate data inputs related to valuation and classification, areas where AI is already being implemented in customs.

1. *Classification and Valuation:* AI technologies support the classification of goods through the Harmonized System (HS) codes, simplifying matters for users and providing greater compliance and certainty. AI-powered tools can also assist in Valuation by extracting information from supporting trade documents and analysing data mismatches compared to customs declarations, reducing the manual verification of data. [50]

[47]https://economictimes.indiatimes.com/tech/technology/can-use-ai-to-identify-anti-dumping-duty-fta-prep-nasscom-to-govt/articleshow/103330468.cms?from=mdr
[48] World Customs Organization & World Trade Organization, *Joint Report on the Role of Customs in Facilitating Trade and Ensuring Compliance* (2024), https://www.wcoomd.org..
[49] ibid
[50] World Economic Forum, *Artificial Intelligence for Efficiency, Sustainability and Inclusivity in TradeTech*, Insight Report (Jan. 2025), https://www.weforum.org/publications/artificial-intelligence-for-efficiency-sustainability-and-inclusivity-in-tradetech-2025/.

2. *Processing Complex Documentation:* AI tools can analyze large datasets and are adept at synthesizing information, which is critical in an investigation where the Designated Authority (DA) must gather and analyze vast amounts of data. AI can extract insights from unstructured data, such as scanned documents, communications, and inspection reports, which is essential for accurate dumping margin calculation.[51]

Legal Feasibility of AI Integration

The WTO anti-dumping agreement provides substantive and procedural obligations for investigating authorities. The agreement nowhere provides for the methodology to be adopted whilst investigating. It just mandates that the determinations must be based on positive evidence[52] and emphasise on due process, transparency and disclosure of essential facts. [53] Thus, it can be deduced that the agreement per se is technologically neutral. In *US Hot Rolled steel*[54], it was held that the authority enjoys a certain degree of discretion in choosing its methodology. In *EC Fasteners, China* it was stated that the investigating authority may adopt any techniques suited to complex data analysis, subject to due process requirements.[55] Thus, AI assisted tools for anti-dumping would not contravene the ADA, provided the authorities remain responsible for the findings and the same is reviewable under Article 17.

In the Indian scenario, the anti-dumping rules outline the procedural obligations[56], but likewise does not prescribe any investigative techniques. Thus, the DGTR possess administrative discretion to deploy any digital or algorithmic systems. The DGTR has modernised the trade remedy regime by creating a e-platform for submitting petitions and responses and creation of a web application 'ARTIS' to streamline filing, tracking and transparency of anti-dumping cases[57]. This digitisation has already paved the way for integrating AI tools under the Indian anti-dumping framework and its data laws.

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[51] Ibid

[52] *Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994* arts. 2–3, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 201 [hereinafter Anti-Dumping Agreement].

[53] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 arts. 6, 12, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 201 [hereinafter Anti-Dumping Agreement].

[54] Panel Report, *United States – Anti-Dumping Measures on Certain Hot-Rolled Steel Products from Japan*, WTO Doc. WT/DS184/R ¶ 7.68 (2001)

[55] Appellate Body Report, *European Communities – Definitive Anti-Dumping Measures on Certain Iron or Steel Fasteners from China*, WTO Doc. WT/DS397/AB/R ¶ 441 (2011).

[56] *Customs Tariff (Identification, Assessment and Collection of Anti-Dumping Duty on Dumped Articles and for Determination of Injury) Rules, 1995*, G.S.R. 1(E) (Jan. 1, 1995

[57]https://government.economictimes.indiatimes.com/news/governance/dgtr-marks-8th-anniversary-with-renewed-focus-on-fair-trade-and-digital-modernization/121234022?utm_source=chatgpt.com

Accordingly both WTO and Indian legal framework permit the integration of AI ins anti-dumping investigations so long as such systems function as decision support mechanisms under due supervision. The implications for data protection and cyber security will be examined in detail in the subsequent section.

Jurisprudence of AI And Liability Debate

Given the context of AI being used for investigations, it is important to look at the liability for any wrong procedure adopted by an AI or the result arrived by it. It is inherently difficult to determine why an AI system reached a given output or decision[58] and further, because of how the AI Ecosystem operates, it may be impossible to reverse engineer the decision-making process to know on which data the AI system relied.[59] Therefore, it is crucial to look at the liability regime surrounding AI. While there are various legal and human rights issues surrounding AI including Intellectual Property issues, the question of liability of AI as a separate legal entity has been a subject of extensive debates.[60] It has been argued that while establishing criminal liability for AI systems is difficult due to the requirement of *mens rea,* AI systems may be held liable for strict liability offences.[61] However, currently, there is no law governing Artificial Intelligence in India. Therefore, it does not possess a separate legal personality to make it liable as an independent entity. Further, AI performs the function of assisting the DGTR in carrying out the investigations, and hence, employing AI would not make the AI itself liable for any contraventions with the law but the persons or authorities deploying AI would remain accountable. This implies that the Director General of Trade Remedies will still be accountable even if AI tools are used as part of the investigations. Furthermore, any breach of the international obligations of India, specifically the obligations under WTO's Anti-Dumping protocols, would entail the International State Responsibility of

[58] Peter Holley, How Quickly Can AI Solve a Rubik's Cube?: In Less Time Than It Took You to Read This Headline., WASH. POST (July 16, 2019), https://www.washingtonpost.com/technology/2019/07/16/how-quickly-can-ai-solve-rubikscube-less-time-than-it-took-you-read-this-headline [https://perma.cc/YF6S-J23A] ("But since the algorithm was programmed merely to solve the puzzle, researchers were left with a limited understanding of how it did so." (emphasis added)).

[59] Iria Giuffrida, Liability for AI Decision-Making: Some Legal and Ethical Considerations, 88 Fordham L. Rev. 439 (2019). Available at: https://ir.lawnet.fordham.edu/flr/vol88/iss2/3

[60] Rachum-Twaig, Omri, Whose Robot Is It Anyway?: Liability for Artificial-Intelligence-Based Robots (February 21, 2019). University of Illinois Law Review, Vol. 2020, Forthcoming , Available at SSRN: https://ssrn.com/abstract=3339230, *see also* Hallevy, Prof. Gabriel, AI v. IP - Criminal Liability for Intellectual Property IP Offenses of Artificial Intelligence AI Entities (November 17, 2015). Available at SSRN: https://ssrn.com/abstract=2691923 or http://dx.doi.org/10.2139/ssrn.2691923

[61] Kingston, J.K.C. (2016). Artificial Intelligence and Legal Liability. In: Bramer, M., Petridis, M. (eds) Research and Development in Intelligent Systems XXXIII. SGAI 2016. Springer, Cham. https://doi.org/10.1007/978-3-319-47175-4_20

India. The DGTR is a quasi-judicial body[62], making it a state organ under Article 4 of the Draft Articles on the Responsibility of States for Internationally Wrongful Acts[63] and any act in contravention to the international obligations of the State due to the deployment of AI tools will still remain attributable to India. Therefore, the use of AI is merely a means and does not displace the State responsibility of India. Therefore, adequate oversight and safeguards must accompany AI assisted processes.

Implications For Cyber Law In India

The DGTR occupies a fiduciary position when processing trade information submitted by the domestic producers and foreign exporters. In handling such commercially sensitive data, the DGTR occupies the role of data fiduciary within the meaning of section 2(i) of the Digital Personal Data Protection Act, 2023 (DPDP Act).[64] AI systems in anti-dumping investigations depend on massive and sensitive datasets like trade secret, production records and export-import logs. A single compromise of this could distort the process and undermine the confidentiality obligations under Article 6.5 of ADA.[65]

a) *Information Technology Act, 2000 and Rules*: Section 43A of the Information Technology Act, 2000 states that a corporate body in possession of sensitive personal data must implement reasonable security practices and procedures and maybe liable for compensation in the event of wrongful loss or gain caused by negligence.[66] Although, in this scenario the DGTR is a government authority, the analogous duties of confidentiality and care flow from constitutional privacy guarantees recognized in *Justice K.S. Puttaswamy v. Union of India*[67]. Sections 43, 66, and 72A of the IT Act impose liability for unauthorized access, data theft, or breach of lawful contract. [68] These provisions acquire new salience when DGTR employs AI models hosted on external or cloud infrastructure. The Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011 require implementation of ISO/IEC 27001-compliant safeguards, encryption, and

[62] https://www.commerce.gov.in/about-us/attached-offices/directorate-general-of-trade-remedies-dgtr/
[63] Draft Articles on the Responsibility of States for Internationally Wrongful Acts 2001, Article 4
[64] *Digital Personal Data Protection Act, 2023*, No. 22 of 2023, § 2(i) (India).
[65] Agreement on Implementation of Article VI of the GATT 1994, art. 6.5.
[66] Information Technology Act, 2000, § 43A.
[67] *Justice K.S. Puttaswamy (Retd.) & Anr. v. Union of India & Ors.*, (2017) 10 S.C.C. 1 (India)
[68] Information Technology Act, 2000, §§ 43, 66, 72A.

controlled access.[69] A lapse in such due diligence could expose both the DGTR and its contracted technology partners to statutory penalties.

b) *DPDP Act 2023:*The DPDP Act 2023 brought a comprehensive framework for data fiduciaries with obligations such as purpose limitation, storage limitation and security safeguards. Section 4 and 8 oblige fiduciaries to process data lawfully and implement appropriate security measures.[70] Cross-border data transfer poses an additional challenge. Section 16 of the DPDP Act empowers the Central Government to restrict personal-data transfers to certain jurisdictions.[71] Since AI models frequently depend on cloud-based services operated overseas, DGTR must ensure data residency in compliance with localization directives. The confidentiality obligation under Article 6.5 of the WTO Anti-Dumping Agreement reinforces the need for stringent data-governance measures that align domestic cyber law with international commitments.[72]

Cybersecurity Challenges

1. *Vulnerability Attacks:* AI adoption introduces new complexities and potential vulnerabilities. Customs data necessary for AD investigations is sensitive and susceptible to cyber-attacks like data poisoning and adversarial manipulation of algorithms.
2. *Algorithmic Bias:* AI system can suffer from malfunction resulting in biased decision making especially where the data is unstructured. [73]
3. *Inaccuracy and Hallucinations:* AI systems generate inaccurate or misleading predictions based on incomplete or ambiguous data leading to incorrect flagging of shipments or improper risk assessment.[74]
4. *Opacity Challenges:* Many AI models operate as "black boxes", meaning that it is difficult to understand how they reach decisions. This lack of transparency raises ethical concerns, and can amplify risks of misinformation and systemic bias. It also complicates efforts to assign liability and seek redress should harm be caused by AI-

[69] Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011, Gazette of India, G.S.R. 313(E).
[70] Digital Personal Data Protection Act, No. 22 of 2023, § 4-8
[71] Digital Personal Data Protection Act, No. 22 of 2023, § 16
[72] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, 1868 U.N.T.S. 201, art. 6.5 [hereinafter WTO Anti-Dumping Agreement].
[73] Rebecca Williams, Rethinking Administrative Law for Algorithmic Decision Making, 42 Oxford J. Legal Stud. 468 (2022).
[74] Jennifer Cobbe, Michelle Seng Ah Lee & Jatinder Singh, *Reviewable Automated Decision-Making: A Framework for Accountable Algorithmic Systems*, 5 ACM FAT 2021.

enabled products. Addressing these challenges requires the development of explainable AI i.e. AI systems whose decision-making processes are transparent and understandable to humans, improved data practices, continuous evaluation and verification, and enhanced digital literacy.[75]

5. *Procedural Fairness Mandate:* The Supreme Court of India has stressed the importance of procedural fairness in anti-dumping investigations. In *Nirma Ltd. v. Designated Authority*, the Court emphasized that investigative activities should be conducted in conditions whereby all the circumstances of the case would be viewed and the interested parties given a fair chance to state their case.[76] If AI provides an opaque justification for a decision, it risks violating this core principle.

CHAPTER III

Conclusion

The integration of Artificial Intelligence into India's anti-dumping investigations truly marks the intersection of trade law, administrative governance, and cyber regulation. Although the WTO Anti-Dumping Agreement and the domestic framework under the Customs Tariff Act of 1975 and the 1995 Rules are neutral regarding technology, their procedural mandate of transparency, due process, and reasoned determination remains immutable. AI can significantly improve DGTR's analytical capability for handling voluminous data, detecting dumping patterns, and quick decision-making, however, its deployment without effective safeguards puts at risk procedural fairness, confidentiality, and data integrity.

The paper highlights that the absence of a set methodology under the WTO regime permits states to use AI as a decision-support tool, as long as human accountability, auditability, and judicial review are maintained. Simultaneously, the fiduciary obligations imposed on the DGTR by the Digital Personal Data Protection Act, 2023 and the Information Technology Act, 2000 require stringent cybersecurity, purpose limitation, and oversight for the processing of trade data.

Therefore, AI in anti-dumping investigations must evolve within a hybrid legal architecture anchored by WTO compliance, supported by domestic cyber law, and reinforced through algorithmic transparency. Anchoring it with a statutory AI governance framework, cross-

[75] Jennifer Cobbe, Michelle Seng Ah Lee & Jatinder Singh, Reviewable Automated Decision-Making: A Framework for Accountable Algorithmic Systems, 5 ACM FAT 2021.
[76] [2005] 186 ELT 385 (SC).

regulatory coordination, and its phased adoption could ensure that technological innovation supports, rather than undermines, India's rule of law commitments. If well-designed, AI can change anti-dumping from a reactive legal tool into a proactive, data-driven application mechanism that furthers trade justice together with digital integrity in the era of intelligent governance.

CHAPTER IV

Suggestions

Integrating Artificial Intelligence into India's Anti-dumping investigations can improve efficiency, but it must happen within a strong legal framework that protects due process, confidentiality, and data integrity. The following suggestions aim to support AI use by the Directorate General of Trade Remedies in line with India's obligations under the WTO Anti-Dumping Agreement, the Information Technology Act, 2000, and the Digital Personal Data Protection Act, 2023.

1. A Regulatory Governance Framework for AI in Trade Investigations: A dedicated Artificial Intelligence framework should outline allowed AI functions, such as data clustering or predictive analytics, while banning autonomous decision-making in trade remedy investigations[77]. A human-in-the-loop model must be required at all adjudicatory stages to ensure reasoned decision-making as required by Articles 12-13 of the WTO ADA[78]. Each inference made with AI should be documented through algorithmic audit trails that allow for later judicial review.[79]

2. Cybersecurity-by-Design into DGTR Infrastructure: Since anti-dumping inquiries involve sensitive trade and cost data, the DGTR should follow cybersecurity-by-design principles. Meeting the ISO/IEC 27001 standards and the CERT-In Security Guidelines is crucial to reduce the risk of data breaches and cyberattacks.[80] Section 43A of the IT Act and the 2011 SPDI Rules require reasonable security practices, [81] while Section 8 of the DPDP Act sets fiduciary duties to protect data and notify breaches. [82]Appointing an internal Data Protection Officer would

[77] Council of Europe, *Artificial Intelligence and Administrative Law* 31 (CDCJ 2022).
[78] Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, 1868 U.N.T.S. 201, arts. 12–13.
[79] Jennifer Cobbe, Michelle Seng Ah Lee & Jatinder Singh, Reviewable Automated Decision-Making: A Framework for Accountable Algorithmic Systems, ACM FAT 2021.
[80] Indian Computer Emergency Response Team (CERT-In) Guidelines 2022.
[81] Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011, G.S.R. 313(E) (India).
[82] Digital Personal Data Protection Act, 2023, §§ 8, 16 (India).

promote accountability and ensure compliance with the decision in *Justice K.S. Puttaswamy v. Union of India*, where the Supreme Court affirmed informational privacy as a constitutional right.[83]

3. Hybrid Accountability Model: Responsibility for algorithmic decisions must rest with individuals and institutions. DGTR officers responsible for final decisions should confirm that AI outputs were reviewed and understood.[84] Publicly disclosing AI usage in final outcomes will improve transparency and meet WTO procedural requirements.[85] A three-tiered accountability framework is suggested, (a) technical liability for AI developers in cases of bias or malfunction, (b) administrative liability for DGTR officers for misuse or oversight failure, and (c) state liability for systemic failures that go against WTO obligations.[86] This aligns with the argument that public law accountability principles should apply to algorithmic decision-making in government processes.[87]

4. Inter-Regulatory Coordination: Given that AI in trade investigations involves technology, privacy, and trade regulations, an inter-agency task force, including the DGTR, MeitY, DPIIT, and CERT-In, should be formed. This group would review new AI tools, update risk protocols regularly, and publish Guidelines on AI in Government Adjudication. Such cooperation reflects global best practices found in the Council of Europe's 2022 report on Artificial Intelligence and Administrative Law, highlighting cross-regulatory partnerships for public-sector AI governance.[88]

5. Phased Implementation: AI deployment should start with pilot programs focused on data organization or trend analysis, not adjudicatory reasoning. Transparency requires that the reasoning behind AI tools be documented in an explainability dossier available for judicial or WTO review.[89] The EU's AI Liability Directive and OECD AI Principles both stress that explainability and human oversight are essential for trustworthy AI.[90]

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[83] Justice K.S. Puttaswamy (Retd.) v. Union of India, (2017) 10 S.C.C. 1 (India).
[84] Jennifer Cobbe, Michelle Seng Ah Lee & Jatinder Singh, Reviewable Automated Decision-Making: A Framework for Accountable Algorithmic Systems, ACM FAT 2021.
[85] WTO Anti-Dumping Agreement, supra note 2, arts. 6.5, 12.
[86] Miriam Buiten et al., EU Liability Rules for the Age of Artificial Intelligence (2021).
[87] Rebecca Williams, *Rethinking Administrative Law for Algorithmic Decision-Making*, 42 Oxford J. Legal Stud. 468 (2022).
[88] Council of Europe, *Artificial Intelligence and Administrative Law* 31 (CDCJ 2022).
[89] Miriam Buiten et al., *EU Liability Rules for the Age of Artificial Intelligence* (2021).
[90] Organisation for Economic Co-operation and Development, *OECD Principles on Artificial Intelligence* (2019).